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DEPARTMENT OF STATE

22 CFR Parts 121, 123, 124, and 125

RIN 1400-AD46

[Public Notice 8580]

Amendment to the International Traffic in Arms Regulations: Third Rule Implementing Export Control Reform.

AGENCY: Department of State.

ACTION: Final rule.

SUMMARY: As part of the President's Export Control Reform (ECR) effort, the Department of State is amending the International Traffic in Arms Regulations (ITAR) to revise five more U.S Munitions List (USML) categories and provide other changes. The revisions contained in this rule are part of the Department of State's retrospective plan under E.O. 13563.

DATES: This rule is effective [insert date 180 days after date of publication in the *Federal Register*].

FOR FURTHER INFORMATION CONTACT: Ms. Sarah J. Heidema, Deputy Director, Office of Defense Trade Controls Policy, Department of State, telephone (202) 663-2809; e-mail DDTCResponseTeam@state.gov.

ATTN: Regulatory Change, Third ECR Final Rule. The Department of State's full retrospective plan can be accessed at

<http://www.state.gov/documents/organization/181028.pdf>.

SUPPLEMENTARY INFORMATION: The Directorate of Defense Trade Controls (DDTC), U.S. Department of State, administers the International Traffic in Arms Regulations (ITAR) (22 CFR parts 120-130). The items subject to the jurisdiction of the ITAR, *i.e.*, "defense articles" and "defense services," are identified on the ITAR's U.S. Munitions List

(USML) (22 CFR 121.1). With few exceptions, items not subject to the export control jurisdiction of the ITAR are subject to the jurisdiction of the Export Administration Regulations (“EAR,” 15 CFR parts 730-774, which includes the Commerce Control List (CCL) in Supplement No. 1 to part 774), administered by the Bureau of Industry and Security (BIS), U.S. Department of Commerce. Both the ITAR and the EAR impose license requirements on exports, reexports, and retransfers. Items not subject to the ITAR or to the exclusive licensing jurisdiction of any other set of regulations are subject to the EAR.

All references to the USML in this rule are to the list of defense articles controlled for the purpose of export or temporary import pursuant to the ITAR, and not to the defense articles on the USML that are controlled by the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) for the purpose of permanent import under its regulations. *See* 27 CFR part 447. Pursuant to section 38(a)(1) of the Arms Export Control Act (AECA), all defense articles controlled for export or import are part of the USML under the AECA. For the sake of clarity, the list of defense articles controlled by ATF for the purpose of permanent import is the U.S. Munitions Import List (USMIL). The transfer of defense articles from the ITAR’s USML to the EAR’s CCL for the purpose of export control does not affect the list of defense articles controlled on the USMIL under the AECA for the purpose of permanent import.

Export Control Reform Update

Pursuant to the President’s Export Control Reform (ECR) initiative, the Department published proposed revisions to thirteen USML categories – and upon the effective date of this rule will have revised fifteen USML categories – to create a more positive control list and eliminate, where

possible, “catch all” controls in the USML. The Department, along with the Departments of Commerce and Defense, reviewed the public comments the Department received on the proposed rules and, where appropriate, revised the rules. A discussion of the comments relevant to the USML categories that are part of this rule is included later on in this rule. The Department continues to review the remaining USML categories and will publish them as proposed rules in the coming months.

Discussions of the public comments relevant to six of the USML categories that have been published as final rules are in “Amendment to the International Traffic in Arms Regulations: Initial Implementation of Export Control Reform,” published April 16, 2013 (78 FR 22740), and “Amendment to the International Traffic in Arms Regulations: Continued Implementation of Export Control Reform,” published July 8, 2013 (78 FR 40922). These rules also contain policies and procedures regarding the licensing of items moving from the export jurisdiction of the Department of State to the Department of Commerce, a definition for specially designed, responses to public comments, and changes to other sections of the ITAR that affect the categories discussed in this rule.

Pursuant to ECR, the Department of Commerce has been publishing revisions to the EAR, including various revisions to the CCL. Revision of the USML and CCL are coordinated so there is uninterrupted regulatory coverage for items moving from the jurisdiction of the Department of State to that of the Department of Commerce. The Department of Commerce’s companion to this rule is, “Control of Military Training Equipment, Energetic Materials, Personal Protective Equipment, Shelters, Articles Related to Launch Vehicles, Missiles, Rockets, Military Explosives, and

Related Items.” It is published elsewhere in this edition of the *Federal Register*.

Changes in this Rule

The following changes are made to the ITAR with this final rule: (i) revision of U.S. Munitions List (USML) Categories IV (Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs, and Mines), V (Explosives and Energetic Materials, Propellants, Incendiary Agents, and Their Constituents), IX (Military Training Equipment), X (Personal Protective Equipment), and XVI (Nuclear Weapons Related Articles); (ii) addition of a definition for the term “equipment”; (iii) continued implementation of a new licensing procedure for the export of items subject to the EAR that are to be exported with defense articles; and (iv) related changes to other ITAR sections.

Revision of USML Category IV

This final rule revises USML Category IV, covering launch vehicles, guided missiles, ballistic missiles, rockets, torpedoes, bombs, and mines, to describe more precisely the articles warranting control on the USML.

Paragraph (a) is revised to remove demolition blocks and blasting caps, and to add subparagraphs (1) through (12) to more clearly describe the articles controlled in (a). ITAR §121.11, which further describes demolition blocks and blasting caps, is removed. Paragraphs (b) and (d) are revised to more specifically enumerate the articles controlled therein. The articles of paragraph (e), military explosive excavating devices, are transferred to the jurisdiction of the Department of Commerce under ECCN 0A604.b. The articles of paragraph (f), ablative materials, were moved to USML Category XIII(d) (*see* 78 FR 40922). Paragraph (h) is revised by removing its broad catch-all wording and adding subparagraphs (1) through (29) to specifically

enumerate the articles controlled in that paragraph. In addition, articles common to the Missile Technology Control Regime (MTCR) Annex and articles in this category are identified with the parenthetical “(MT)” at the end of each section containing such articles.

A new “(x) paragraph” has been added to USML Category IV, allowing ITAR licensing for commodities, software, and technical data subject to the EAR provided those commodities, software, and technical data are to be used in or with defense articles controlled in USML Category IV and are described in the purchase documentation submitted with the application.

This revision of USML Category IV was first published as a proposed rule (RIN 1400-AD19) on January 31, 2013, for public comment (*see* 78 FR 6765). The comment period ended March 18, 2013. The public comments were reviewed and considered by the Department and other agencies. The Department’s evaluation of the written comments and recommendations follows.

The Department received proposals for alternative phrasing of the regulatory text in USML Category IV. When the recommended changes added to the clarity of the regulation and were consistent with ECR objectives, the Department accepted them.

One commenting party observed that, with regard to technical data directly related to a defense article controlled on the USML and unclassified technical data directly related to parts and components of the defense article that are controlled on the CCL, insofar as the parts and components are directly related to the defense article, certain of the technical data directly related to the defense article by virtue of being directly related to the parts and components of the defense article would not be captured by the

technical data control paragraph, depending on whether the parts and components are part of the defense article at the point of export, or are proposed for export apart from the defense article. The commenting party discerns an export jurisdictional conflict. The Department clarifies that unclassified technical data directly related to the parts and components that are controlled under the CCL would not be controlled under the ITAR. The Department would, however, have export jurisdiction over aggregated technical data that included technical data directly related to a defense article. Unclassified technical data directly related to parts and components that would be controlled under the CCL would remain subject to the EAR if they were proposed for export apart from the ITAR controlled technical data.

In response to two commenting parties' requests for clarification, "payload fairings" controlled under paragraph (h) has been revised to control for "rocket or missile payload fairings."

Two commenting parties recommended changing the MT control text used in paragraph (h) from the criterion of "usable in" to that of "specially designed" so as to prevent capture of items not intended to be controlled for MT reasons. The Department did not accept this recommendation because to do so would be in contravention of the Missile Technology Control Regime Annex. In explaining the use of the term "usable in," the MTCR Annex provides that, "there is no need for the equipment, parts, components or 'software' to have been configured, modified or specified for the particular purpose."

One commenting party recommended controlling "pulse weapons" under USML Category IV. The control of these articles will be addressed in a future rule that will address USML Category XVIII.

In response to two commenting parties' recommendations, the Department revised Note 1 to paragraph (b) to clarify that non-SLV launcher mechanisms for use on aircraft are controlled under USML Category VIII.

One commenting party inquired whether the use of a Missile Technology (MT) component in conjunction with non-MT components renders the whole item MT-controlled. The Department notes that the MTCR guidelines provide the following: If a Category I item is included in a system, that system will also be considered as Category I, except when the incorporated item cannot be separated, removed, or duplicated. The ITAR will follow the same policy in such circumstances, and the Department placed a note in USML Category IV to this effect.

The Department accepted the recommendation of one commenting party to control under paragraph (h) pneumatic flight control systems, in addition to hydraulic, mechanical, electro-optical, or electromechanical flight control systems already enumerated therein.

In response to the recommendation of one commenting party, the Department revised the note to paragraph (h)(17) to provide more accurate guidance for determining the export jurisdiction of spacecraft: exporters should consult USML Category XV and, if the spacecraft is not described therein, then CCL ECCN 9A515.

One commenting party requested clarification of whether there are sounding or research rockets not controlled under the USML. The Department clarifies that all such rockets are controlled under USML Category IV.

Two commenting parties observed that the issue of control of commercial space flight was not addressed in the USML Category IV proposed rule. This matter is dealt with in the USML Category XV

proposed rule, which was published on May 24, 2013 (*see* 78 FR 31444). The Department will respond to comments on the substance of that rule, including commercial space flight, in a separate final rule.

Revision of USML Category V

This final rule revises USML Category V, covering explosives and energetic materials, propellants, incendiary agents, and their constituents, to establish a clear “bright line” between the USML and the CCL for the control of these articles.

One major change of this rule is the listing of specific materials that warrant ITAR control caught by former “catch-all” paragraphs. Examples of materials added because of deletion of catch-all paragraphs are as follows: tetrazines (BTAT (Bis(2,2,2-trinitroethyl)-3,6-diaminotetrazine); LAX-112 (3,6-diamino- 1,2,4,5-tetrazine- 1,4-dioxide); PNO (Poly(3-nitrato oxetane); 4,5 diazidomethyl-2-methyl-1,2,3-triazole (iso- DAMTR)); TEPB (Tris (ethoxyphenyl) bismuth) (CAS 90591-48-3); and TEX (4,10-Dinitro- 2,6,8,12-tetraoxa-4,10-diazaisowurtzitane). Materials once captured in the catch-all paragraphs that do not warrant control on the USML are to be controlled on the CCL. Examples of such materials removed from various catch-all paragraphs and controlled on the CCL are spherical aluminum powder and hydrazine and its derivatives.

Articles common to the MTCR Annex and articles in this category are identified with the parenthetical “(MT)” at the end of each section containing such articles.

A new “(x) paragraph” has been added to USML Category V, allowing ITAR licensing for commodities, software, and technical data subject to the EAR provided those commodities, software, and technical data are to be used in or with defense articles controlled in USML Category V

and are described in the purchase documentation submitted with the application.

This revision of USML Category V was first published as a proposed rule (RIN 1400-AD02) on May 2, 2012, for public comment (*see* 77 FR 25944). The comment period ended June 18, 2012. The public comments were reviewed and considered by the Department and other agencies. The Department's evaluation of the written comments and recommendations follows.

One commenting party recommended quantifying the level of concentration that would establish USML control of certain items that have commercial applications. For two of these items – RDX and its derivatives and HMX and its derivatives – the MTCR Annex does not provide for a minimum level for establishing control as a munitions item. For the other two – Tetryl and 1,3,5-trichlorobenzene – the Department determined that there is no minimum level for identifying military utility or lack thereof. Therefore, the Department did not accept this recommendation.

In response to one commenting party's concern that the changing of a control criterion for explosives in paragraph (a)(38) may lead to the control under the USML of articles previously determined to be controlled under the CCL, the Department reverted to the previously-provided threshold of 8,700m/s.

One commenting party recommended removal of the control for developmental explosives, etc., when developed under a contract with the U.S. Government because this would stymie university fundamental research. The Department does not accept this recommendation, but revised paragraph (i) to qualify the control of such articles under development.

The Department did not accept the recommendation of one commenting party to adopt the American Society for Metals definition for “alloy” so as to clarify the controls provided in paragraphs (c)(4)(ii)(B) and (c)(4)(iii) because the context of the controls makes clear that any alloys of materials covered in those paragraphs would automatically meet the criteria of that definition of alloy.

Revision of USML Category IX

This final rule revises USML Category IX, covering military training equipment, to more accurately describe the articles within this category in order to establish a “bright line” between the USML and the CCL for the control of these articles.

The title of the category is changed to indicate that it covers training equipment only. Training on a defense article would be a defense service covered under the category in which the defense article is enumerated.

Paragraph (a) lists all the types of training equipment covered in this category. Paragraph (b) is revised to more specifically describe the items (simulators) controlled therein. Tooling and production equipment, formerly controlled in paragraph (c), are covered on the CCL in ECCN 0B614.

Radar target generators are to be controlled in USML Category XI(a). Until the revised USML Category XI goes into effect, radar target generators are enumerated in paragraph (a). Similarly, infrared scene generators are enumerated in paragraph (a), although the intention is to control them in a revised USML Category XII.

Upon the effective date of this rule USML Category IX will not contain controls on all generic parts, components, accessories, and attachments (formerly captured in paragraph (d)) that are in any way specifically designed or modified for a defense article described in USML

Category IX, regardless of their significance to maintaining a military advantage for the United States. These items are subject to the new 600 series controls in Category 0 of the CCL, published separately by the Department of Commerce elsewhere in this issue of the *Federal Register*.

A new “(x) paragraph” has been added to USML Category IX, allowing ITAR licensing for commodities, software, and technical data subject to the EAR provided those commodities, software, and technical data are to be used in or with defense articles controlled in USML Category IX and are described in the purchase documentation submitted with the application.

This revision of USML Category IX was first published as a proposed rule (RIN 1400-AD02) on June 13, 2012, for public comment (*see* 77 FR 35317). The comment period ended July 30, 2012. The public comments were reviewed and considered by the Department and other agencies. The Department’s evaluation of the written comments and recommendations follows.

The Department received proposals for alternative phrasing of the regulatory text in USML Category IX. When the recommended changes added to the clarity of the regulation, did not alter the intended scope of the control, and were consistent with ECR objectives, the Department accepted them.

One commenting party recommended the removal of paragraph (b)(4), which covers software used for modeling or simulation, as the control of software elsewhere on the USML is related to hardware. The commenting party was concerned that treating it differently here may cause confusion over what software is controlled in other categories. The Department did not accept this recommendation because, in this instance,

the enumerated software is the object of control. The Department believes that the control for software in other categories is clear.

To address the concerns of one commenting party that paragraph (a)(2) would control articles outside the definition of a defense article, the Department added a note to that paragraph explaining that mockups of defense articles that do not reveal technical data and do not contain parts, components, accessories, or attachments controlled on the USML are themselves not controlled on the USML.

Revision of USML Category X

This final rule revises USML Category X, covering personal protective equipment, in order to establish a “bright line” between the USML and the CCL for the control of these articles.

The title of the category is changed to remove reference to shelters, as those items formerly enumerated in paragraph (b) (permanent or transportable shelters specifically designed or modified to protect against ballistic shock or impact and nuclear, biological, or chemical contamination) are now subject to the EAR and controlled under ECCN 1A613. Body armor enumerated in paragraph (a)(1) is that which meets or exceeds NIJ Standard-0101.06 Type IV. Type III body armor formerly on the USML is controlled on the CCL under ECCN 1A613. Anti-gravity suits, pressure suits, and atmosphere diving suits, formerly controlled in paragraphs (a)(3), (a)(4), and (a)(5), respectively, are now subject to the EAR. Paragraph (a)(7) controls certain protective goggles, spectacles, and visors with an optical density of greater than 3.

Equipment for the production of articles covered in this category (former paragraph (c)), are controlled on the CCL under ECCN 1B613.

Paragraph (d), which controls parts, components, assemblies, accessories, attachments, and associated equipment, is limited in scope to include only ceramic or composite body armor plates, laser protective lenses and other materials for the articles enumerated in paragraph (a)(7), and classified hardware. As with the revision of other categories, USML Category X will not control generic, non-specific parts, components, accessories, and attachments that are in any way specifically designed or modified for a defense article, regardless of their significance to maintaining a military advantage for the United States. These items are subject to the new 600 series controls in Category 1 of the CCL, published separately by the Department of Commerce.

A new “(x) paragraph” has been added to USML Category X, allowing ITAR licensing for commodities, software, and technical data subject to the EAR provided those commodities, software, and technical data are to be used in or with defense articles controlled in USML Category X and are described in the purchase documentation submitted with the application.

This revision of USML Category X was first published as a proposed rule (RIN 1400-AD16) on June 7, 2012, for public comment (*see* 77 FR 33698). The comment period ended July 23, 2012. The public comments were reviewed and considered by the Department and other agencies. The Department’s evaluation of the written comments and recommendations follows.

In response to one commenting party’s concern that the paragraph controlling goggles, etc., was written in a manner that would control commercial articles, the Department revised the text to better describe the articles meriting control on the USML.

Two commenting parties expressed concern that the control for developmental articles would capture articles solely on the basis of being developed via funding by the Department of Defense, even though they were being developed for commercial applications. The Department revised that paragraph to make clear that, among other things, it does not capture articles identified in the relevant Department of Defense contract or other funding authorization as being developed for both civil and military applications.

One commenting party recommended that generic, non-specific parts, components, accessories, and attachments for articles covered in this category not be controlled on the USML. Paragraph (d), which covers parts, components, assemblies, accessories, attachments, and associated equipment for this category, is limited in scope to include only ceramic or composite body armor plates, laser protective lenses and other materials for the articles enumerated in paragraph (a)(7), and classified hardware. The Department believes the rule is consistent with the commenting party's recommendation.

Revision of USML Category XVI

This final rule removes most of the articles formerly enumerated in USML Category XVI (nuclear weapons related articles). The provisions of 22 CFR 120-130 do not apply to the articles, technical data, or services formerly described in USML Category XVI to the extent that exports of such articles, technical data, or services are under the export control of the Department of Energy or the Nuclear Regulatory Commission pursuant to the Atomic Energy Act of 1954, as amended, and the Nuclear Non-Proliferation Act of 1978, as amended, or are pursuant to a government transfer authorized pursuant to these Acts.

USML Category XVI will continue to control modeling or simulation tools that model or simulate the environments generated by nuclear

detonations or the effects of these environments on systems, subsystems, components, structures, or humans, and technical data and defense services directly related to those defense articles. Nuclear radiation detection and measurement devices formerly in paragraph (c) are subject to the EAR under already existing ECCN 1A004.c.2 or 2A291.e.

A new “(x) paragraph” has been added to USML Category XVI, allowing ITAR licensing for commodities, software, and technical data subject to the EAR provided those commodities, software, and technical data are to be used in or with defense articles controlled in USML Category XVI and are described in the purchase documentation submitted with the application.

This revision of USML Category XVI was first published as a proposed rule (RIN 1400-AD18) on January 30, 2013, for public comment (*see* 78 FR 6269). The comment period ended March 18, 2013. The public comments were reviewed and considered by the Department and other agencies. The Department’s evaluation of the written comments and recommendations follows.

One commenting party expressed concern that not controlling on the USML parts and components “necessary for the [nuclear] weapon to be secured, made safe, survive to target, and detonate as planned” will result in these articles becoming vulnerable to counterfeiting, sabotage, and compromise. The Department of Energy has always maintained and will retain control of nuclear weapon-related articles, so this revision of USML Category XVI does not represent a loosening of controls.

One commenting party inquired whether an accessory for a modeling or simulation tool controlled in paragraph (b) is USML-controlled. The Department added a paragraph to the category to control parts, components,

accessories, attachments, and associated equipment, to correct for an unintentional omission. This paragraph would control accessories for articles controlled in paragraph (b).

One commenting party recommended including a note that USML Category XVI does not control modeling or simulation tools that are controlled by the Department of Energy pursuant to the Atomic Energy Act. The Department did not accept this recommendation because ITAR §123.20 explicitly states that the ITAR does not apply to nuclear weapon-related articles to the extent that such articles are under the control of the Department of Energy or the Nuclear Regulatory Commission pursuant to the Atomic Energy Act of 1954, as amended, and the Nuclear Non-Proliferation Act, as amended.

In response to one commenting party's inquiry, the Department confirms that hardware and software are within the scope of USML Category XVI.

One commenting party requested information on the export licensing procedure for items formerly listed in USML Category XVI but now clarified as being under the jurisdiction of the Department of Energy. The Department refers the commenting party to the Department of Energy's National Nuclear Security Administration for its policies and procedures.

Definition for "Equipment"

A definition for the term "equipment" is added to ITAR §121.8. The Department proposed this definition for public comment in a proposed rule (RIN 1400-AD25) published on November 28, 2012 (*see* 77 FR 70958). The Department accepted the recommendation of a commenting party to add the newly defined term "equipment" to the definition of "system," and

amended ITAR §121.8(g) accordingly. In addition, it made editorial changes to the other paragraphs in that section.

Other Technical Changes Included in this Rule

ITAR §121.5, which provided clarification of paragraph (c) of USML Category IV, is removed. Articles formerly listed therein are now identified in a note to paragraph (c) or are enumerated in paragraph (h) of USML Category IV.

ITAR §121.11, which listed items not covered in paragraph (a) of USML Category IV, is removed.

ITAR §123.20 is revised to replace certain undefined terms with terms defined and in normal use in the ITAR, and to provide citation of Department of Commerce authorities regarding the export of nuclear related items. ITAR §124(c)(5) is revised to remove subparagraphs (iii), (ix), and (xi), in accordance with the revision of USML Category XVI. And ITAR §125.1(e) is revised to refer to ITAR §123.20 for the export of technical data related to articles in USML Categories VI(e), XVI, and XX(b)(1).

Adoption of Proposed Rules and Other Changes

Having reviewed and evaluated the comments and recommended changes for the USML Category IV, USML Category V, USML Category IX, USML Category X, and USML Category XVI proposed rules, as well as the proposed rule that included the definition of “equipment,” the Department determined that it will, and hereby does, adopt them, with changes noted and other technical corrections, and promulgates them in final form under this rule.

REGULATORY ANALYSIS AND NOTICES

Administrative Procedure Act

The Department of State is of the opinion that controlling the import and export of defense articles and services is a foreign affairs function of the United States Government and that rules implementing this function are exempt from sections 553 (rulemaking) and 554 (adjudications) of the Administrative Procedure Act (APA). Although the Department is of the opinion that this rule is exempt from the rulemaking provisions of the APA, the Department published this rule as separate proposed rules identified as 1400-AD02, 1400-AD15, 1400-AD16, 1400-AD18, 1400-AD19, and 1400-AD25, each with a 45- or 60-day provision for public comment and without prejudice to its determination that controlling the import and export of defense services is a foreign affairs function.

Regulatory Flexibility Act

Since the Department is of the opinion that this rule is exempt from the provisions of 5 U.S.C. 553, there is no requirement for an analysis under the Regulatory Flexibility Act.

Unfunded Mandates Reform Act of 1995

This rulemaking does not involve a mandate that will result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100 million or more in any year and it will not significantly or uniquely affect small governments. Therefore, no actions were deemed necessary under the provisions of the Unfunded Mandates Reform Act of 1995.

Small Business Regulatory Enforcement Fairness Act of 1996

For purposes of the Small Business Regulatory Enforcement Fairness Act of 1996 (the “Act”), a “major” rule is a rule that the Administrator of the OMB Office of Information and Regulatory Affairs finds has resulted or is likely to result in 1) an annual effect on the economy of \$100,000,000 or

more; 2) a major increase in costs or prices for consumers, individual industries, federal, state, or local government agencies, or geographic regions; or 3) significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic and foreign markets.

The Department does not believe this rulemaking will have an annual effect on the economy of \$100,000,000 or more. Articles that are being removed from coverage in the U.S. Munitions List categories contained in this rule will still require licensing for export, but from the Department of Commerce. While the licensing regime of the Department of Commerce is more flexible than that of the Department of State, it is not expected that the change in jurisdiction of these articles will result in an export difference of \$100,000,000 or more.

The Department also does not believe that this rulemaking will result in a major increase in costs or prices for consumers, individual industries, federal, state, or local government agencies, or geographic regions, or have significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic and foreign markets.

Executive Orders 12372 and 13132

This rulemaking will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 13132, it is determined that this rulemaking does not have sufficient federalism implications to require consultations or warrant the preparation of a

federalism summary impact statement. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities do not apply to this rulemaking.

Executive Orders 12866 and 13563

Executive Orders 12866 and 13563 direct agencies to assess costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributed impacts, and equity). These executive orders stress the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. This rulemaking has been designated a “significant regulatory action,” although not economically significant, under section 3(f) of Executive Order 12866. Accordingly, this rule has been reviewed by the Office of Management and Budget (OMB).

Executive Order 12988

The Department of State reviewed this rulemaking in light of sections 3(a) and 3(b)(2) of Executive Order 12988 to eliminate ambiguity, minimize litigation, establish clear legal standards, and reduce burden.

Executive Order 13175

The Department of State determined that this rulemaking will not have tribal implications, will not impose substantial direct compliance costs on Indian tribal governments, and will not preempt tribal law. Accordingly, the requirements of Executive Order 13175 do not apply to this rulemaking.

Paperwork Reduction Act

Following is a listing of approved collections that will be affected by revision of the U.S. Munitions List (USML) and the Commerce Control List pursuant to the President’s Export Control Reform (ECR) initiative. This

final rule continues the implementation of ECR. Other final rules will follow. The list of collections and the description of the manner in which they will be affected pertains to revision of the USML in its entirety, not only to the categories published in this rule:

- 1) Statement of Registration, DS-2032, OMB No. 1405-0002. The Department estimates that between 3,000 and 5,000 of currently-registered persons will not need to maintain registration following full revision of the USML. This would result in a burden reduction of between 6,000 and 10,000 hours annually, based on a revised time burden of two hours to complete a Statement of Registration.
- 2) Application/License for Permanent Export of Unclassified Defense Articles and Related Unclassified Technical Data, DSP-5, OMB No. 1405-0003. The Department estimates that there will be 35,000 fewer DSP-5 submissions annually following full revision of the USML. This would result in a burden reduction of 35,000 hours annually. In addition, the DSP-5 will allow respondents to select USML Category XIX, a newly-established category, as a description of articles to be exported.
- 3) Application/License for Temporary Import of Unclassified Defense Articles, DSP-61, OMB No. 1405-0013. The Department estimates that there will be 200 fewer DSP-61 submissions annually following full revision of the USML. This would result in a burden reduction of 100 hours annually. In addition, the DSP-61 will allow respondents to select USML Category XIX, a newly-established category, as a description of articles to be temporarily imported.
- 4) Application/License for Temporary Export of Unclassified Defense Articles, DSP-73, OMB No. 1405-0023. The Department estimates that there will be 800 fewer DSP-73 submissions annually following full revision

of the USML. This would result in a burden reduction of 800 hours annually. In addition, the DSP-73 will allow respondents to select USML Category XIX, a newly-established category, as a description of articles to be temporarily exported.

5) Application for Amendment to License for Export or Import of Classified or Unclassified Defense Articles and Related Technical Data, DSP-6, -62, -74, -119, OMB No. 1405-0092. The Department estimates that there will be 2,000 fewer amendment submissions annually following full revision of the USML. This would result in a burden reduction of 1,000 hours annually. In addition, the amendment forms will allow respondents to select USML Category XIX, a newly-established category, as a description of the articles that are the subject of the amendment request.

6) Request for Approval of Manufacturing License Agreements, Technical Assistance Agreements, and Other Agreements, DSP-5, OMB No. 1405-0093. The Department estimates that there will be 1,000 fewer agreement submissions annually following full revision of the USML. This would result in a burden reduction of 2,000 hours annually. In addition, the DSP-5, the form used for the purposes of electronically submitting agreements, will allow respondents to select USML Category XIX, a newly-established category, as a description of articles to be exported.

7) Maintenance of Records by Registrants, OMB No. 1405-0111. The requirement to actively maintain records pursuant to provisions of the International Traffic in Arms Regulations (ITAR) will decline commensurate with the drop in the number of persons who will be required to register with the Department pursuant to the ITAR. As stated above, the Department estimates that between 3,000 and 5,000 of the currently-registered persons will not need to maintain registration following full

revision of the USML. This would result in a burden reduction of between 60,000 and 100,000 hours annually. However, the ITAR does provide for the maintenance of records for a period of five years. Therefore, persons newly relieved of the requirement to register with the Department may still be required to maintain records.

8) Export Declaration of Defense Technical Data or Services, DS-4071, OMB No. 1405-0157. The Department estimates that there will be 2,000 fewer declaration submissions annually following full revision of the USML. This would result in a burden reduction of 1,000 hours annually.

List of Subjects

22 CFR 121 and 125

Arms and munitions, Classified information, Exports.

22 CFR 123

Arms and munitions, Exports, Reporting and recordkeeping requirements.

22 CFR 124

Arms and munitions, Exports, Technical assistance.

Accordingly, for the reasons set forth above, Title 22, Chapter I, Subchapter M, parts 121, 123, 124 and 125 are amended as follows:

PART 121 – THE UNITED STATES MUNITIONS LIST

1. The authority citation for part 121 continues to read as follows:

Authority: Secs. 2, 38, and 71, Pub. L. 90–629, 90 Stat. 744 (22 U.S.C. 2752, 2778, 2797); 22 U.S.C. 2651a; Pub. L. 105–261, 112 Stat. 1920; Section 1261, Pub. L. 112-239; E.O. 13637, 78 FR 16129.

2. Section 121.1 is amended by revising U.S. Munitions List Categories IV, V, IX, X, and XVI to read as follows:

§121.1 General. The United States Munitions List.

* * * * *

Category IV— Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs, and Mines

*(a) Rockets, space launch vehicles (SLVs), missiles, bombs, torpedoes, depth charges, mines, and grenades, as follows:

- (1) Rockets, SLVs, and missiles capable of delivering at least a 500 kg payload to a range of at least 300 km (MT);
- (2) Rockets, SLVs, and missiles capable of delivering less than a 500 kg payload to a range of at least 300 km (MT);
- (3) Man-portable air defense systems (MANPADS);
- (4) Anti-tank missiles and rockets;
- (5) Rockets, SLVs, and missiles not meeting the criteria of paragraphs (a)(1) through (a)(4) of this category;
- (6) Bombs;
- (7) Torpedoes;
- (8) Depth charges;
- (9) Anti-personnel, anti-vehicle, or anti-armor land mines (*e.g.*, area denial devices);
- (10) Anti-helicopter mines;
- (11) Naval mines; or
- (12) Fragmentation and high explosive hand grenades.

Note 1 to paragraph (a): “Range” is the maximum distance that the specified rocket system is capable of traveling in the mode of stable flight as measured by the projection of its trajectory over the surface of the Earth. The maximum capability based on the design characteristics of the system, when fully loaded with fuel or propellant, will be taken into consideration in determining range. The range for rocket systems will be determined

independently of any external factors such as operational restrictions, limitations imposed by telemetry, data links, or other external constraints. For rocket systems, the range will be determined using the trajectory that maximizes range, assuming International Civil Aviation Organization (ICAO) standard atmosphere with zero wind.

Note 2 to paragraph (a): “Payload” is the total mass that can be carried or delivered by the specified rocket, SLV, or missile that is not used to maintain flight.

Note 3 to paragraph (a): This paragraph does not control model and high power rockets (as defined in National Fire Protection Association Code 1122) and kits thereof made of paper, wood, fiberglass, or plastic containing no substantial metal parts and designed to be flown with hobby rocket motors that are certified for consumer use. Such rockets must not contain active controls (e.g., RF, GPS).

Note 4 to paragraph (a): “Mine” means a munition placed under, on, or near the ground or other surface area and designed to be exploded by the presence, proximity, or contact of a person or vehicle.

*(b) Launchers for rockets, SLVs, and missiles, as follows:

(1) Fixed launch sites and mobile launcher mechanisms for any system enumerated in paragraphs (a)(1) and (a)(2) of this category (e.g., launch tables, TOW missile, MANPADS) (MT); or

(2) Fixed launch sites and mobile launcher mechanisms for any system enumerated in paragraphs (a)(3) through (a)(5) of this category (e.g., launch tables, TOW missile, MANPADS).

Note 1 to paragraph (b): For controls on non-SLV launcher mechanisms for use on aircraft, see USML Category VIII(h).

Note 2 to paragraph (b): For controls on launcher mechanisms that are integrated onto a vessel or ground vehicle, *see* USML Categories VI and VII, respectively.

Note 3 to paragraph (b): This paragraph does not control parts and accessories (*e.g.*, igniters, launch stands) specially designed for consumer use with model and high power rockets (as defined in National Fire Protection Association Code 1122) and kits thereof made of paper, wood, fiberglass, or plastic containing no substantial metal parts and designed to be flown with hobby rocket motors that are certified for consumer use.

(c) Apparatus and devices specially designed for the handling, control, activation, monitoring, detection, protection, discharge, or detonation of the articles enumerated in paragraphs (a) and (b) of this category (MT for those systems enumerated in paragraphs (a)(1), (a)(2), and (b)(1) of this category).

Note 1 to paragraph (c): This paragraph includes specialized handling equipment (transporters, cranes, and lifts) specially designed to handle articles enumerated in paragraphs (a) and (b) of this category for preparation and launch from fixed and mobile sites. The equipment in this paragraph also includes specially designed robots, robot controllers, and robot end-effectors, and liquid propellant tanks specially designed for the storage or handling of the propellants controlled in USML Category V, CCL ECCNs 1C011, 1C111, and 1C608, or other liquid propellants used in the systems enumerated in paragraphs (a)(1), (a)(2), or (a)(5) of this category.

Note 2 to paragraph (c): Aircraft Missile Protection Systems (AMPS) are controlled in USML Category XI.

*(d) Rocket, SLV, and missile power plants, as follows:

(1) Except as enumerated in paragraph (d)(2) or (d)(3) of this category, individual rocket stages for the articles enumerated in paragraph (a)(1),

- (a)(2), or (a)(5) of this category (MT for those stages usable in systems enumerated in paragraphs (a)(1) and (a)(2) of this category);
- (2) Solid propellant rocket motors, hybrid or gel rocket motors, or liquid propellant rocket engines having a total impulse capacity equal to or greater than 1.1×10^6 N·s (MT);
- (3) Solid propellant rocket motors, hybrid or gel rocket motors, or liquid propellant rocket engines having a total impulse capacity equal to or greater than 8.41×10^5 N·s, but less than 1.1×10^6 N·s (MT);
- (4) Combined cycle, pulsejet, ramjet, or scramjet engines (MT);
- (5) Air-breathing engines that operate above Mach 4 not enumerated in paragraph (d)(4) of this category;
- (6) Pressure gain combustion-based propulsion systems not enumerated in paragraphs (d)(4) and (d)(5) of this category; or
- (7) Rocket, SLV, and missile engines and motors, not otherwise enumerated in paragraphs (d)(1) through (d)(6) of this category or USML Category XIX.
- Note to paragraph (d): This paragraph does not control model and high power rocket motors, containing no more than 5 pounds of propellant, that are certified for U.S. consumer use as described in National Fire Protection Association Code 1125.
- (e) [Reserved]
- (f) [Reserved]
- *(g) Non-nuclear warheads for rockets, bombs, and missiles (*e.g.*, explosive, kinetic, EMP, thermobaric, shape charge, and fuel air explosive (FAE)).
- (h) Systems, subsystems, parts, components, accessories, attachments, or associated equipment, as follows:

(1) Flight control and guidance systems (including guidance sets) specially designed for articles enumerated in paragraph (a) of this category (MT for those articles enumerated in paragraphs (a)(1) and (a)(2) of this category);

Note to paragraph (h)(1): A guidance set integrates the process of measuring and computing a vehicle's position and velocity (*i.e.*, navigation) with that of computing and sending commands to the vehicle's flight control systems to correct the trajectory.

(2) Seeker systems specially designed for articles enumerated in paragraph (a) of this category (*e.g.*, radiofrequency, infrared) (MT for articles enumerated in paragraphs (a)(1) and (a)(2) of this category);

(3) Kinetic kill vehicles and specially designed parts and components therefor;

(4) Missile or rocket thrust vector control systems (MT for those thrust vector control systems usable in articles enumerated in paragraph (a)(1) of this category);

(5) MANPADS grip stocks and specially designed parts and components therefor;

(6) Rocket or missile nozzles and nozzle throats, and specially designed parts and components therefor (MT for those nozzles and nozzle throats usable in systems enumerated in paragraphs (a)(1) and (a)(2) of this category);

(7) Rocket or missile nose tips, nose fairings, or aerospikes, and specially designed parts and components therefor (MT for those articles enumerated in paragraphs (a)(1) and (a)(2) of this category);

(8) Re-entry vehicle or warhead heat shields (MT for those re-entry vehicles and heat shields usable in systems enumerated in paragraph (a)(1) of this category);

- (9) Missile and rocket safing, arming, fuzing, and firing (SAFF) components (to include target detection and proximity sensing devices), and specially designed parts therefor (MT for those SAFF components usable in systems enumerated in paragraph (a)(1) of this category);
- (10) Self-destruct systems specially designed for articles enumerated in paragraph (a) of this category (MT for those articles enumerated in paragraphs (a)(1) and (a)(2) of this category);
- (11) Separation mechanisms, staging mechanisms, and interstages useable for articles enumerated in paragraph (a) of this category, and specially designed parts and components therefor (MT for those separation mechanisms, staging mechanisms, and interstages usable in systems enumerated in paragraph (a)(1) of this category);
- (12) Post-boost vehicles (PBV) (MT);
- (13) Engine or motor mounts specially designed for articles enumerated in paragraphs (a) and (b) of this category (MT for those articles enumerated in paragraphs (a)(1), (a)(2), and (b)(1) of this category);
- (14) Combustion chambers specially designed for articles enumerated in paragraphs (a) and (d) of this category and specially designed parts and components therefor (MT for those articles enumerated in paragraphs (a)(1), (a)(2), (b)(1), and (d)(1) through (d)(5) of this category);
- (15) Injectors specially designed for articles controlled in this category (MT for those injectors specially designed which are usable in systems enumerated in paragraph (a)(1) of this category);
- (16) Solid rocket motor or liquid engine igniters;
- (17) Re-entry vehicles and specially designed parts and components therefor not elsewhere specified in this category (MT);

Note to paragraph (h)(17): This paragraph does not control spacecraft. For controls on spacecraft, *see* USML Category XV and, if not described therein, then CCL ECCN 9A515.

(18) Specially designed parts and components for articles controlled in paragraph (g) not elsewhere specified in this category;

(19) Penetration aids and specially designed parts and components therefor (*e.g.*, physical or electronic countermeasure suites, re-entry vehicle replicas or decoys, or submunitions);

(20) Rocket motor cases and specially designed parts and components therefor (*e.g.*, flanges, flange seals, end domes) (MT for those rocket motor cases usable in systems enumerated in paragraphs (a)(1) and (a)(2) of this category and for specially designed parts and components for hybrid rocket motors enumerated in paragraphs (d)(2) and (d)(3) of this category);

(21) Solid rocket motor liners and rocket motor insulation (MT for those solid rocket motor liners usable in systems enumerated in paragraph (a)(1) of this category or specially designed for systems enumerated in paragraph (a)(2) of this category; and rocket motor insulation usable in systems enumerated in paragraphs (a)(1) and (a)(2) of this category);

(22) Radomes, sensor windows, and antenna windows specially designed for articles enumerated in paragraph (a) of this category (MT for those radomes usable in systems enumerated in paragraph (a)(1) of this category and for any radomes, sensor windows, or antenna windows manufactured as composite structures or laminates specially designed for use in the systems and components enumerated in paragraph (a)(1), (a)(2), (d)(1), (h)(8), (h)(9), (h)(17), or (h)(25) of this category);

(23) Rocket or missile payload fairings;

(24) Rocket or missile launch canisters (MT for those rocket or missile launch canisters designed or modified for systems enumerated in paragraphs (a)(1) and (a)(2) of this category);

(25) Fuzes specially designed for articles enumerated in paragraph (a) of this category (*e.g.*, proximity, contact, electronic, dispenser proximity, airburst, variable time delay, or multi-option) (MT for those fuzes usable in systems enumerated in paragraph (a)(1) of this category);

(26) Rocket or missile liquid propellant tanks (MT for those rocket or missile liquid propellant tanks usable in systems enumerated in paragraph (a)(1) of this category);

(27) Rocket or missile altimeters specially designed for use in articles enumerated in paragraph (a)(1) of this category (MT);

(28) Pneumatic, hydraulic, mechanical, electro-optical, or electromechanical flight control systems (including fly-by-wire systems) and attitude control equipment specially designed for use in the rockets or missiles enumerated in paragraph (a)(1) of this category (MT for these systems which have been designed or modified for those enumerated in paragraph (a)(1) of this category);

(29) Umbilical and interstage electrical connectors specially designed for use in the rockets or missiles enumerated in paragraph (a)(1) or (a)(2) of this category (MT); or

Note to paragraph (h)(29): This paragraph also includes electrical connectors installed between the systems specified in paragraph (a)(1) or (a)(2) of this category and their payload.

*(30) Any part, component, accessory, attachment, equipment, or system that (MT for those articles designated as such):

(i) Is classified;

- (ii) Contains classified software directly related to defense articles in this subchapter or 600 series items subject to the EAR; or
- (iii) Is being developed using classified information.

Note to paragraph (h)(30): "Classified" means classified pursuant to Executive Order 13526, or predecessor order, and a security classification guide developed pursuant thereto or equivalent, or to the corresponding classification rules of another government or international organization.

- (i) Technical data (*see* §120.10 of this subchapter) and defense services (*see* §120.9 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) through (h) of this category and classified technical data directly related to items controlled in ECCNs 0A604, 0B604, 0D604, 9A604, 9B604, or 9D604 and defense services using the classified technical data. (*See* §125.4 of this subchapter for exemptions.) (MT for technical data and defense services related to articles designated as such.)

(j)–(w) [Reserved]

- (x) Commodities, software, and technical data subject to the EAR (*see* §120.42 of this subchapter) used in or with defense articles controlled in this category.

Note to paragraph (x): Use of this paragraph is limited to license applications for defense articles controlled in this category where the purchase documentation includes commodities, software, or technical data subject to the EAR (*see* §123.1(b) of this subchapter).

Note to Category IV: If a Missile Technology Control Regime Category I item is included in a system, that system will also be considered as a Category I item, except when the incorporated item cannot be separated, removed, or duplicated.

Category V—Explosives and Energetic Materials, Propellants, Incendiary Agents, and Their Constituents

*(a) Explosives, and mixtures thereof, as follows:

- (1) ADNBF (aminodinitrobenzofuroxan or 7-Amino 4,6-dinitrobenzofurazane-1-oxide) (CAS 97096–78–1);
- (2) BNCP (cis-bis(5-nitrotetrazolato) tetra amine-cobalt (III) perchlorate) (CAS 117412–28–9);
- (3) CL–14 (diaminodinitrobenzofuroxan or 5,7-diamino-4,6-dinitrobenzofurazane-1-oxide) (CAS 117907–74–1);
- (4) CL–20 (HNIW or Hexanitrohexaazaisowurtzitane) (CAS 135285–90–4); clathrates of CL–20 (MT for CL-20);
- (5) CP (2-(5-cyanotetrazolato) penta aminecobalt (III) perchlorate) (CAS 70247–32–4);
- (6) DADE (1,1-diamino-2,2-dinitroethylene, FOX-7);
- (7) DATB (Diaminotrinitrobenzene) (CAS 1630–08–6);
- (8) DDFP (1,4-dinitrodifurazanopiperazine);
- (9) DDPO (2,6-diamino-3,5-dinitropyrazine-1-oxide, PZO) (CAS 194486–77–6);
- (10) DIPAM (3,3'-Diamino-2,2',4,4',6,6'-hexanitrobiphenyl or dipicramide) (CAS 17215–44–0);
- (11) DNAN (2,4-Dinitroanisoole) (CAS 119-27-7);
- (12) DNGU (DINGU or dinitroglycoluril) (CAS 55510–04–8);
- (13) Furazans, as follows:
 - (i) DAAOF (DAAF, DAAFox, or diaminoazoxyfurazan);
 - (ii) DAAzF (diaminoazofurazan) (CAS 78644–90–3);
 - (iii) ANF (Furazanamine, 4-nitro- or 3-Amino-4-nitrofurazan; or 4-Nitro-1,2,5-oxadiazol-3-amine; or 4-Nitro-3-furazanamine; CAS 66328-69-6); or

- (iv) ANAzF (Aminonitroazofurazan or 1,2,5-Oxadiazol-3-amine, 4-[2-(4-nitro-1,2,5-oxadiazol-3-yl) diazenyl]; or 1,2,5-Oxadiazol-3-amine, 4-[(4-nitro-1,2,5-oxadiazol-3-yl)azo]- (9CI); or Furazanamine, 4-[(nitrofurany)azo]-; or 4-[(4-Nitro-1,2,5-oxadiazol-3-yl)azo]-1,2,5-oxadiazol-3-amine) (CAS 155438-11-2);
- (14) GUDN (Guanylurea dinitramide) FOX-12 (CAS 217464-38-5);
- (15) HMX and derivatives, as follows:
 - (i) HMX (Cyclotetramethylenetetranitramine; octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazine; 1,3,5,7-tetranitro-1,3,5,7-tetraza-cyclooctane; octogen, octogene) (CAS 2691-41-0) (MT);
 - (ii) Difluoroaminated analogs of HMX; or
 - (iii) K-55 (2,4,6,8-tetranitro-2,4,6,8-tetraazabicyclo [3,3,0]-octanone-3, tetranitrosemiglycouril, or keto-bicyclic HMX) (CAS 130256-72-3);
- (16) HNAD (hexanitroadamantane) (CAS 143850-71-9);
- (17) HNS (hexanitrostilbene) (CAS 20062-22-0);
- (18) Imidazoles, as follows:
 - (i) BNNII (Octahydro-2,5-bis(nitroimino) imidazo [4,5-d]imidazole);
 - (ii) DNI (2,4-dinitroimidazole) (CAS 5213-49-0);
 - (iii) FDIA (1-fluoro-2,4-dinitroimidazole);
 - (iv) NTDNIA (N-(2-nitrotriazolo)-2,4-dinitro-imidazole); or
 - (v) PTIA (1-picryl-2,4,5-trinitroimidazole);
- (19) NTNMH (1-(2-nitrotriazolo)-2-dinitromethylene hydrazine);
- (20) NTO (ONTA or 3-nitro-1,2,4-triazol-5-one) (CAS 932-64-9);
- (21) Polynitrocubanes with more than four nitro groups;
- (22) PYX (2,6-Bis(picrylamino)-3,5-dinitropyridine) (CAS 38082-89-2);
- (23) RDX and derivatives, as follows:

- (i) RDX (cyclotrimethylenetrinitramine), cyclonite, T4, hexahydro-1,3,5-trinitro-1,3,5-triazine, 1,3,5-trinitro-1,3,5-triaza-cyclohexane, hexogen, or hexogene) (CAS 121–82–4) (MT);
- (ii) Keto-RDX (K–6 or 2,4,6-trinitro-2,4,6-triazacyclohexanone) (CAS 115029–35–1); or
- (iii) Difluoraminated derivative of RDX; 1,3-Dinitro-5,5-bis(difluoramino)1,3-diazahehexane (CAS No. 193021-34-0);
- (24) TAGN (Triaminoguanidinenitrate) (CAS 4000–16–2);
- (25) TATB (Triaminotrinitrobenzene) (CAS 3058–38–6);
- (26) TEDDZ (3,3,7,7-tetrakis(difluoroamine) octahydro-1,5-dinitro-1,5-diazocine;
- (27) Tetrazines, as follows:
 - (i) BTAT (Bis(2,2,2-trinitroethyl)-3,6-diaminotetrazine); or
 - (ii) LAX-112 (3,6-diamino-1,2,4,5-tetrazine-1,4-dioxide);
- (28) Tetrazoles, as follows:
 - (i) NTAT (nitrotriazolaminotetrazole); or
 - (ii) NTNT (1-N-(2-nitrotriazolo)-4-nitrotetrazole);
- (29) Tetryl (trinitrophenylmethylnitramine) (CAS 479–45–8);
- (30) TEX (4,10-Dinitro-2,6,8,12-tetraoxa-4,10-diazaisowurtzitane);
- (31) TNAD (1,4,5,8-tetranitro-1,4,5,8-tetraazadecalin) (CAS 135877-16–6);
- (32) TNAZ (1,3,3-trinitroazetidine) (CAS 97645–24–4);
- (33) TNGU (SORGUYL or tetranitroglycoluril) (CAS 55510–03–7);
- (34) TNP (1,4,5,8-tetranitro-pyridazino [4,5-d] pyridazine) (CAS 229176–04–9);
- (35) Triazines, as follows:
 - (i) DNAM (2-oxy-4,6-dinitroamino-s-triazine) (CAS 19899–80–0); or

(ii) NNHT (2-nitroimino-5-nitro-hexahydro-1,3,5 triazine) (CAS 130400–13–4);

(36) Triazoles, as follows:

(i) 5-azido-2-nitrotriazole;

(ii) ADHTDN (4-amino-3,5-dihydrazino-1,2,4-triazole dinitramide) (CAS 1614–08–0);

(iii) ADNT (1-amino-3,5-dinitro-1,2,4-triazole);

(iv) BDNTA (Bis(dinitrotriazole)amine);

(v) DBT (3,3'-dinitro-5,5-bi-1,2,4-triazole) (CAS 30003–46–4);

(vi) DNBT (dinitrobistriazole) (CAS 70890–46–9);

(vii) NTDNT (1-N-(2-nitrotriazolo) 3,5-dinitro-triazole);

(viii) PDNT (1-picryl-3,5-dinitrotriazole); or

(ix) TACOT (tetranitrobenzotriazolobenzotriazole) (CAS 25243–36–1);

(37) Energetic ionic materials melting between 70 and 100 degrees C and with detonation velocity exceeding 6800 m/s or detonation pressure exceeding 18 GPa (180 kbar); or

(38) Explosives, not otherwise enumerated in this paragraph or on the CCL in ECCN 1C608, with a detonation velocity exceeding 8700m/s at maximum density or a detonation pressure exceeding 34 Gpa (340 kbar).

*(b) Propellants, as follows (MT for composite and composite modified double-base propellants):

(1) Any solid propellant with a theoretical specific impulse (*see* paragraph (k)(4) of this category) greater than:

(i) 240 seconds for non-metallized, non-halogenated propellant;

(ii) 250 seconds for non-metallized, halogenated propellant; or

(iii) 260 seconds for metallized propellant;

(2) Propellants having a force constant of more than 1,200 kJ/Kg;

(3) Propellants that can sustain a steady-state burning rate more than 38mm/s under standard conditions (as measured in the form of an inhibited single strand) of 6.89 Mpa (68.9 bar) pressure and 294K (21°C);

(4) Elastomer-modified cast double-based propellants with extensibility at maximum stress greater than 5% at 233 K (−40°C); or

(5) Other composite and composite modified double-base propellants.

(c) Pyrotechnics, fuels and related substances, and mixtures thereof, as follows:

(1) Alane (aluminum hydride) (CAS 7784–21–6);

(2) Carboranes; decaborane (CAS 17702–41–9); pentaborane and derivatives thereof (MT);

(3) Liquid high energy density fuels, as follows (MT):

(i) Mixed fuels that incorporate both solid and liquid fuels, such as boron slurry, having a mass-based energy density of 40 MJ/kg or greater; or

(ii) Other high energy density fuels and fuel additives (*e.g.*, cubane, ionic solutions, JP-7, JP-10) having a volume-based energy density of 37.5 GJ per cubic meter or greater, measured at 20°C and one atmosphere (101.325 kPa) pressure;

Note to paragraph (c)(3)(ii): JP-4, JP-8, fossil refined fuels or biofuels, or fuels for engines certified for use in civil aviation are not included.

(4) Metal fuels, and fuel or pyrotechnic mixtures in particle form whether spherical, atomized, spheroidal, flaked, or ground, manufactured from material consisting of 99% or more of any of the following:

(i) Metals, and mixtures thereof, as follows:

(A) Beryllium (CAS 7440–41–7) in particle sizes of less than 60 micrometers (MT); or

- (B) Iron powder (CAS 7439–89–6) with particle size of 3 micrometers or less produced by reduction of iron oxide with hydrogen;
- (ii) Fuel mixtures or pyrotechnic mixtures, which contain any of the following:
 - ((A) Boron (CAS 7440–42–8) or boron carbide (CAS 12069–32–8) fuels of 85% purity or higher and particle sizes of less than 60 micrometers; or
 - (B) Zirconium (CAS 7440–67–7), magnesium (CAS 7439–95–4), or alloys of these in particle sizes of less than 60 micrometers;
 - (iii) Explosives and fuels containing the metals or alloys listed in paragraphs (c)(4)(i) and (c)(4)(ii) of this category whether or not the metals or alloys are encapsulated in aluminum, magnesium, zirconium, or beryllium;
- (5) Fuel, pyrotechnic, or energetic mixtures having any nanosized aluminum, beryllium, boron, zirconium, magnesium, or titanium, as follows:
 - (i) Having particle size less than 200 nm in any direction; and
 - (ii) Having 60% or higher purity;
- (6) Pyrotechnic and pyrophoric materials, as follows:
 - (i) Pyrotechnic or pyrophoric materials specifically formulated to enhance or control the production of radiated energy in any part of the IR spectrum; or
 - (ii) Mixtures of magnesium, polytetrafluoroethylene and the copolymer vinylidene difluoride and hexafluoropropylene (MT);
- (7) Titanium subhydride (TiH_n) of stoichiometry equivalent to $n = 0.65\text{--}1.68$; or
- (8) Hydrocarbon fuels specially formulated for use in flame throwers or incendiary munitions containing metal stearates (*e.g.*, octal) or palmitates, and M1, M2, and M3 thickeners.
- (d) Oxidizers, as follows:
 - (1) ADN (ammonium dinitramide or SR–12) (CAS 140456–78–6) (MT);

- (2) AP (ammonium perchlorate) (CAS 7790–98–9) (MT);
- (3) BDNPN (bis(2,2-dinitropropyl)nitrate) (CAS 28464–24–6);
- (4) DNAD (1,3-dinitro-1,3-diazetidine) (CAS 78246–06–7);
- (5) HAN (Hydroxylammonium nitrate) (CAS 13465–08–2);
- (6) HAP (hydroxylammonium perchlorate) (CAS 15588–62–2);
- (7) HNF (Hydrazinium nitroformate) (CAS 20773–28–8) (MT);
- (8) Hydrazine nitrate (CAS 37836–27–4) (MT);
- (9) Hydrazine perchlorate (CAS 27978–54–7) (MT);
- (10) Inhibited red fuming nitric acid (IRFNA) (CAS 8007–58–7) and liquid oxidizers comprised of or containing IRFNA or oxygen difluoride (MT for liquid oxidizers comprised of IRFNA); or
- (11) Perchlorates, chlorates, and chromates composited with powdered metal or other high energy fuel components controlled under this category (MT).

*(e) Binders, and mixtures thereof, as follows:

- (1) AMMO (azidomethylmethyloxetane and its polymers) (CAS 90683–29–7);
- (2) BAMO (bis(azidomethyl)oxetane and its polymers) (CAS 17607–20–4);
- (3) BTTN (butanetriol trinitrate) (CAS 6659–60–5) (MT);
- (4) FAMAO (3-difluoroaminomethyl-3-azidomethyloxetane) and its polymers;
- (5) FEFO (bis(2-fluoro-2,2-dinitroethyl)formal) (CAS 17003–79–1);
- (6) GAP (glycidyl azide polymer) (CAS 143178–24–9) and its derivatives (MT for GAP);
- (7) HTPB (hydroxyl-terminated polybutadiene) with a hydroxyl functionality equal to or greater than 2.2 and less than or equal to 2.4, a hydroxyl value of less than 0.77 meq/g, and a viscosity at 30 °C of less than 47 poise (CAS 69102–90–5) (MT);

- (8) 4,5 diazidomethyl-2-methyl-1,2,3-triazole (iso- DAMTR) (MT);
- (9) NENAS (nitrateethylnitramine compounds), as follows:
 - (i) N-Methyl 2-nitrateethylnitramine (Methyl-NENA) (CAS 17096-47-8) (MT);
 - (ii) N-Ethyl 2-nitrateethylnitramine (Ethyl-NENA) (CAS 85068-73-1) (MT);
 - (iii) N-Propyl 2-nitrateethylnitramine (CAS 82486-83-7);
 - (iv) N-Butyl-2-nitrateethylnitramine (BuNENA) (CAS 82486-82-6); or
 - (v) N-Pentyl 2-nitrateethylnitramine (CAS 85954-06-9);
- (10) Poly-NIMMO (poly nitratomethylmethyloxetane, poly-NMMO, (poly[3-nitratomethyl-3-methyl oxetane]) (CAS 84051-81-0);
- (11) PNO (Poly(3-nitratooxetane));
- (12) TVOPA 1,2,3-Tris [1,2-bis(difluoroamino)ethoxy]propane; tris vinoxyl propane adduct (CAS 53159-39-0);
- (13) Polynitroorthocarbonates;
- (14) FPF-1 (poly-2,2,3,3,4,4-hexafluoro pentane-1,5-diolformal) (CAS 376-90-9);
- (15) FPF-3 (poly-2,4,4,5,5,6,6-heptafluoro-2-trifluoromethyl-3-oxaheptane-1,7-diolformal);
- (16) PGN (Polyglycidyl nitrate or poly(nitratomethyloxirane); poly-GLYN); (CAS 27814-48-8);
- (17) N-methyl-p-nitroaniline (MT);
- (18) Low (less than 10,000) molecular weight, alcohol-functionalized, poly(epichlorohydrin); poly(epichlorohydrindiol); and triol; or
- (19) Dinitropropyl based plasticizers, as follows (MT):
 - (i) BDNPA (bis (2,2-dinitropropyl) acetal) (CAS 5108-69-0); or
 - (ii) BDNPF (bis (2,2-dinitropropyl) formal) (CAS 5917-61-3).

(f) Additives, as follows:

- (1) Basic copper salicylate (CAS 62320–94–9);
- (2) BHEGA (Bis-(2-hydroxyethyl)glycolamide) (CAS 17409–41–5);
- (3) BNO (Butadienenitrile oxide);
- (4) Ferrocene derivatives, as follows (MT):
 - (i) Butacene (CAS 125856–62–4);
 - (ii) Catocene (2,2-Bis-ethylferrocenylpropane) (CAS 37206–42–1);
 - (iii) Ferrocene carboxylic acids and ferrocene carboxylic acid esters;
 - (iv) n-butylferrocene (CAS 31904–29–7);
 - (v) Ethylferrocene (CAS 1273-89-8);
 - (vi) Propylferrocene;
 - (vii) Pentylferrocene (CAS 1274-00-6);
 - (viii) Dicyclopentylferrocene;
 - (ix) Dicyclohexylferrocene;
 - (x) Diethylferrocene (CAS 173-97-8);
 - (xi) Dipropylferrocene;
 - (xii) Dibutylferrocene (CAS 1274-08-4);
 - (xiii) Dihexylferrocene (CAS 93894-59-8);
 - (xiv) Acetylferrocene (CAS 1271-55-2)/1,1'-diacetyl ferrocene (CAS 1273-94-5); or
 - (xv) Other ferrocene derivatives that do not contain a six carbon aromatic functional group attached to the ferrocene molecule (MT if usable as rocket propellant burning rate modifier);
- (5) Lead beta-resorcyate (CAS 20936–32–7);
- (6) Lead citrate (CAS 14450–60–3);
- (7) Lead-copper chelates of beta-resorcyate or salicylates (CAS 68411–07–4);

- (8) Lead maleate (CAS 19136–34–6);
 - (9) Lead salicylate (CAS 15748–73–9);
 - (10) Lead stannate (CAS 12036–31–6);
 - (11) MAPO (tris-1-(2-methyl) aziridinyolphosphine oxide) (CAS 57–39–6); BOBBA–8 (bis(2-methyl aziridiny1)-2-(2-hydroxypropanoxy) propylamino phosphine oxide); and other MAPO derivatives (MT for MAPO);
 - (12) Methyl BAPO (Bis(2-methyl aziridiny1)methylaminophosphine oxide) (CAS 85068–72–0);
 - (13) 3-Nitrazo-1,5-pentane diisocyanate (CAS 7406–61–9);
 - (14) Organo-metallic coupling agents, as follows:
 - (i) Neopentyl[diallyl]oxy, tri [dioctyl] phosphatotitanate (CAS 103850–22–2); also known as titanium IV, 2,2[bis 2-propenolato-methyl, butanolato, tris (dioctyl) phosphato] (CAS 110438–25–0), or LICA 12 (CAS 103850–22–2);
 - (ii) Titanium IV, [(2-propenolato-1) methyl, n-propanolatomethyl] butanolato-1, tris(dioctyl)pyrophosphate, or KR3538; or
 - (iii) Titanium IV, [(2-propenolato-1)methyl, propanolatomethyl] butanolato-1, tris(dioctyl) phosphate;
 - (15) PCDE (Polycyanodifluoroaminoethylene oxide);
 - (16) Certain bonding agents, as follows (MT):
 - (i) 1,1R,1S-trimesoyl-tris(2-ethylaziridine) (HX-868, BITA) (CAS 7722-73-8); or
 - (ii) Polyfunctional aziridine amides with isophthalic, trimesic, isocyanuric, or trimethyladipic backbone also having a 2-methyl or 2-ethyl aziridine group;
- Note to paragraph (f)(16)(ii): Included are 1) 1,1H-Isophthaloyl-bis(2-methylaziridine) (HX-752) (CAS 7652-64-4); 2) 2,4,6-tris(2-ethyl-1-

aziridinyl)-1,3,5-triazine (HX-874) (CAS 18924-91-9); and 3) 1,1'-trimethyladipoylbis(2-ethylaziridine) (HX-877) (CAS 71463-62-2).

(17) Superfine iron oxide (Fe_2O_3 , hematite) with a specific surface area more than $250 \text{ m}^2/\text{g}$ and an average particle size of 0.003 micrometers or less (CAS 1309-37-1);

(18) TEPAN (HX-879) (tetraethylenepentaamineacrylonitrile) (CAS 68412-45-3); cyanoethylated polyamines and their salts (MT for TEPAN (HX-879));

(19) TEPANOL (HX-878) (tetraethylenepentaamineacrylonitrileglycidol) (CAS 110445-33-5); cyanoethylated polyamines adducted with glycidol and their salts (MT for TEPANOL (HX-878));

(20) TPB (triphenyl bismuth) (CAS 603-33-8) (MT); or

(21) Tris (ethoxyphenyl) bismuth (TEPB) (CAS 90591-48-3).

(g) Precursors, as follows:

(1) BCMO (bischloromethyloxetane) (CAS 142173-26-0);

(2) DADN (1,5-diacetyl-3,7-dinitro-1, 3, 5, 7-tetraazacyclooctane);

(3) Dinitroazetidine-t-butyl salt (CAS 125735-38-8);

(4) CL-20 precursors (any molecule containing hexaazaisowurtzitane) (*e.g.*, HBIW (hexabenzylhexaazaisowurtzitane), TAIW (tetraacetyldibenzylhexaazaisowurtzitane));

(5) TAT (1, 3, 5, 7-tetraacetyl-1, 3, 5, 7-tetraazacyclooctane) (CAS 41378-98-7);

(6) Tetraazadecalin (CAS 5409-42-7);

(7) 1,3,5-trichlorobenzene (CAS 108-70-3); or

(8) 1,2,4-trihydroxybutane (1,2,4-butanetriol) (CAS 3068-00-6).

*(h) Any explosive, propellant, pyrotechnic, fuel, oxidizer, binder, additive, or precursor that (MT for articles designated as such):

- (1) Is classified; or
- (2) Is being developed using classified information (*see* §120.10(a)(2) of this subchapter).

Note to paragraph (h): “Classified” means classified pursuant to Executive Order 13526, or predecessor order, and a security classification guide developed pursuant thereto or equivalent, or to the corresponding classification rules of another government or international organization.

- (i) Developmental explosives, propellants, pyrotechnics, fuels, oxidizers, binders, additives, or precursors therefor funded by the Department of Defense via contract or other funding authorization.

Note 1 to paragraph (i): This paragraph does not control explosives, propellants, pyrotechnics, fuels, oxidizers, binders, additives, or precursors therefor (a) in production, (b) determined to be subject to the EAR via a commodity jurisdiction determination (*see* §120.4 of this subchapter), or (c) identified in the relevant Department of Defense contract or other funding authorization as being developed for both civil and military applications.

Note 2 to paragraph (i): Note 1 does not apply to defense articles enumerated on the U.S. Munitions List, whether in production or development.

Note 3 to paragraph (i): This paragraph is applicable only to those contracts and funding authorizations that are dated January 5, 2015, or later.

- (j) Technical data (as defined in §120.10 of this subchapter) and defense services (as defined in §120.9 of this subchapter) directly related to the defense articles numerated in paragraphs (a) through (i) of this category (*see* also §123.20 of this subchapter) (MT for articles designated as such).
- (k) The following interpretations explain and amplify the terms used in this category and elsewhere in this subchapter:

(1) USML Category V contains explosives, energetic materials, propellants, and pyrotechnics and specially formulated fuels for aircraft, missile, and naval applications. Explosives are solid, liquid, or gaseous substances or mixtures of substances, which, in their primary, booster, or main charges in warheads, demolition, or other military applications, are required to detonate.

(2) The resulting product of the combination or conversion of any substance controlled by this category into an item not controlled will no longer be controlled by this category provided the controlled item cannot easily be recovered through dissolution, melting, sieving, etc. As an example, beryllium converted to a near net shape using hot isostatic processes will result in an uncontrolled part. A cured thermoset containing beryllium powder is not controlled unless meeting an explosive or propellant control. The mixture of beryllium powder in a cured thermoset shape is not controlled by this category. The mixture of controlled beryllium powder mixed with a typical propellant binder will remain controlled by this category. The addition of dry silica powder to dry beryllium powder will remain controlled.

(3) Paragraph (c)(4)(ii)(A) of this category does not apply to boron and boron carbide enriched with boron-10 (20% or more of total boron-10 content).

(4) Theoretical specific impulse (Isp) is calculated using standard conditions (1000 psi chamber pressure expanded to 14.7 psi) and measured in units of pound-force-seconds per pound-mass (lbf-s/lbm) or simplified to seconds (s). Calculations will be based on shifting equilibrium.

(5) Particle size is the mean particle diameter on a weight basis. Best industrial practices will be used in determining particle size and the controls

may not be undermined by addition of larger or smaller sized material to shift the mean diameter.

(l)-(w) [Reserved]

(x) Commodities, software, and technical data subject to the EAR (*see* §120.42 of this subchapter) used in or with defense articles controlled in this category.

Note to paragraph (x): Use of this paragraph is limited to license applications for defense articles controlled in this category where the purchase documentation includes commodities, software, or technical data subject to the EAR (*see* §123.1(b) of this subchapter).

Note 1 to USML Category V: To assist the exporter, an item has been categorized by the most common use. Also, where appropriate, references have been provided to the related controlled precursors.

Note 2 to USML Category V: Chemical Abstract Service (CAS) registry numbers do not cover all the substances and mixtures controlled by this category. The numbers are provided as examples to assist government agencies in the license review process and exporters when completing their license application and export documentation.

* * * * *

Category IX—Military Training Equipment

(a) Training equipment, as follows:

- (1) Ground, surface, submersible, space, or towed airborne targets that:
 - (i) Have an infrared, radar, acoustic, magnetic, or thermal signature that mimic a specific defense article, specific other item, or specific person; or
 - (ii) Are instrumented to provide hit/miss performance information for defense articles controlled in this subchapter;

Note to paragraph (a)(1): Target drones are controlled in USML Category VIII(a).

(2) Devices that are mockups of articles enumerated in this subchapter used for maintenance training or disposal training for ordnance enumerated in this subchapter;

Note to paragraph (a)(2): This paragraph does not control mockups that do not reveal technical data (*see* ITAR §120.10 of this subchapter) and do not contain parts, components, accessories, or attachments controlled in this subchapter.

(3) Air combat maneuvering instrumentation and ground stations therefor;

(4) Physiological flight trainers for fighter aircraft or attack helicopters;

(5) Radar trainers specially designed for training on radar controlled by USML Category XI;

(6) Training devices specially designed to be attached to a crew station, mission system, or weapon of an article controlled in this subchapter;

Note to paragraph (a)(6): This paragraph includes stimulators that are built-in or add-on devices that cause the actual equipment to act as a trainer.

(7) Anti-submarine warfare trainers;

(8) Missile launch trainers;

(9) Radar target generators;

(10) Infrared scene generators; or

*(11) Any training device that:

(i) Is classified;

(ii) Contains classified software directly related to defense articles in this subchapter or 600 series items subject to the EAR; or

(iii) Is being developed using classified information.

“Classified” means classified pursuant to Executive Order 13526, or

predecessor order, and a security classification guide developed pursuant thereto or equivalent, or to the corresponding classification rules of another government or international organization.

Note to paragraph (a): Training equipment does not include combat games without item signatures or tactics, techniques, and procedures covered by this subchapter.

(b) Simulators, as follows:

(1) System specific simulators that replicate the operation of an individual crew station, a mission system, or a weapon of an end-item that is controlled in this subchapter;

(2) [Reserved]

(3) [Reserved]

(4) Software and associated databases not elsewhere enumerated in this subchapter that can be used to model or simulate the following:

(i) Trainers enumerated in paragraph (a) of this category;

(ii) Battle management;

(iii) Military test scenarios/models; or

(iv) Effects of weapons enumerated in this subchapter; or

* (5) Simulators that:

(i) Are classified;

(ii) Contain classified software directly related to defense articles in this subchapter or 600 series items subject to the EAR; or

(iii) Are being developed using classified information.

Note to paragraph (b)(5): “Classified” means classified pursuant to Executive Order 13526, or predecessor order, and a security classification guide developed pursuant thereto or equivalent, or to the corresponding classification rules of another government or international organization.

(c) [Reserved]

(d) [Reserved]

(e) Technical data (*see* §120.10 of this subchapter) and defense services (*see* §120.9 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) and (b) of this category.

Note to paragraph (e): This paragraph includes defense services (*see* §120.9 of this subchapter) directly related to the software and associated databases enumerated in paragraph (b)(4) of this category even if no defense articles are used or transferred.

(f)-(w) [Reserved]

(x) Commodities, software, and technical data subject to the EAR (*see* §120.42 of this subchapter) used in or with defense articles controlled in this category.

Note to paragraph (x): Use of this paragraph is limited to license applications for defense articles controlled in this category where the purchase documentation includes commodities, software, or technical data subject to the EAR (*see* §123.1(b) of this subchapter).

Note to USML Category IX: Parts, components, accessories, or attachments of a simulator in this category that are common to the simulated system or simulated end-item are controlled under the same USML category or CCL ECCN as the parts, components, accessories, and attachments of the simulated system or simulated end-item.

Category X— Personal Protective Equipment

(a) Personal protective equipment, as follows:

(1) Body armor providing a protection level equal to or greater than NIJ Type IV;

Note 1 to paragraph (a)(1): For body armor providing a level of protection of Type I, Type II, Type IIA, Type IIIA, or Type III, *see* ECCNs 1A005 and 1A613.

Note 2 to paragraph (a)(1): *See* USML Category XIII(e) for controls on related materials.

(2) Personal protective clothing, equipment, or face paints specially designed to protect against or reduce detection by radar, IR, or other sensors at wavelengths greater than 900 nanometers;

Note to paragraph (a)(2): *See* USML Category XIII(j) for controls on related materials.

(3) [Reserved]

(4) [Reserved]

(5) Integrated helmets, not specified in USML Category VIII(h)(15) or USML Category XII, incorporating optical sights or slewing devices, which include the ability to aim, launch, track, or manage munitions;

(6) Helmets and helmet shells providing a protection level equal to or greater than NIJ Type IV;

(7) Goggles, spectacles, visors, vision blocks, canopies, or filters for optical sights or viewers, employing other than common broadband absorptive dyes or UV inhibitors as a means of protection (*e.g.*, narrow band filters/dyes or broadband limiters/coatings with high visible transparency), having an optical density greater than 3, and that protect against:

(i) Multiple visible (in-band) laser wavelengths;

(ii) Thermal flashes associated with nuclear detonations; or

(iii) Near infrared or ultraviolet (out-of-band) laser wavelengths; or

Note 1 to paragraph (a)(7): *See* paragraphs (d)(2) and (3) of this category for controls on related parts, components, and materials.

Note 2 to paragraph (a)(7): See USML Category XII for sensor protection equipment.

(8) Developmental personal protective equipment and specially designed parts, components, accessories, and attachments therefor, developed for the U.S. Department of Defense via contract or other funding authorization.

Note 1 to paragraph (a)(8): This paragraph does not control personal protective equipment and specially designed parts, components, accessories, and attachments (a) in production, (b) determined to be subject to the EAR via a commodity jurisdiction determination (*see* §120.4 of this subchapter), or (c) identified in the relevant Department of Defense contract or other funding authorization as being developed for both civil and military applications.

Note 2 to paragraph (a)(8): Note 1 does not apply to defense articles enumerated on the USML, whether in production or development.

Note 3 to paragraph (a)(8): This paragraph is applicable only to those contracts and funding authorizations that are dated January 5, 2015, or later.

(b) [Reserved]

(c) [Reserved]

(d) Parts, components, assemblies, accessories, attachments, and associated equipment for the personal protective equipment controlled in this category, as follows:

(1) Ceramic or composite plates that provide protection equal to or greater than NIJ Type IV;

(2) Lenses, substrates, or filters "specially designed" for the articles covered in paragraph (a)(7) of this category;

(3) Materials and coatings specially designed for the articles covered in paragraph (a)(7) of this category with optical density greater than 3, as follows:

- (i) Narrowband absorbing dyes;
- (ii) Broadband optical switches or limiters (*i.e.*, nonlinear material, tunable or switchable agile filters, optical power limiters, near infrared interference based filters); or
- (iii) Narrowband interference based notch filters (*i.e.*, multi-layer dielectric coatings, rugate, holograms or hybrid (*i.e.*, interference with dye)) protecting against multiple laser wavelength and having high visible band transparency; or

*(4) Any component, part, accessory, attachment, equipment, or system that:

- (i) Is classified;
- (ii) Contains classified software directly related to defense articles in this subchapter or 600 series items subject to the EAR; or
- (iii) Is being developed using classified information.

Note to paragraph (d)(4): “Classified” means classified pursuant to Executive Order 13526, or predecessor order, and a security classification guide developed pursuant thereto or equivalent, or to the corresponding classification rules of another government or international government.

Note to paragraphs (a) and (d): See National Institute of Justice Classification, NIJ Standard-0101.06, or national equivalents, for a description of level of protection for armor.

(e) Technical data (*see* §120.10 of this subchapter) and defense services (*see* §120.9 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) through (d) of this category.

(f)-(w) [Reserved]

(x) Commodities, software, and technical data subject to the EAR (*see* §120.42 of this subchapter) used in or with defense articles controlled in this category.

Note to paragraph (x): Use of this paragraph is limited to license applications for defense articles controlled in this category where the purchase documentation includes commodities, software, or technical data subject to the EAR (*see* §123.1(b) of this subchapter).

* * * * *

Category XVI—Nuclear Weapons Related Articles

(a) [Reserved]

*(b) Modeling or simulation tools that model or simulate the environments generated by nuclear detonations or the effects of these environments on systems, subsystems, components, structures, or humans.

(c) [Reserved]

(d) Parts, components, accessories, attachments, associated equipment, and production, testing, and inspection equipment and tooling, specially designed for the articles in paragraph (b) of this category.

(e) Technical data (*see* §120.10 of this subchapter) and defense services (*see* §120.9 of this subchapter) directly related to the defense articles enumerated in paragraph (b) of this category. (*See* §123.20 of this subchapter for nuclear related controls.)

(f)–(w) [Reserved]

(x) Commodities, software, and technical data subject to the EAR (*see* §120.42 of this subchapter) used in or with defense articles controlled in this category.

Note to paragraph (x): Use of this paragraph is limited to license applications for defense articles controlled in this category where the

purchase documentation includes commodities, software, or technical data subject to the EAR (*see* §123.1(b) of this subchapter).

* * * * *

3. Section 121.5 is removed and reserved, as follows:

§121.5 [Reserved]

4. Section 121.8 is revised to read as follows:

§121.8 End-items, components, accessories, attachments, parts, firmware, software, systems, and equipment.

(a) An *end-item* is a system, equipment, or an assembled article ready for its intended use. Only ammunition or fuel or other energy source is required to place it in an operating state.

(b) A *component* is an item which is useful only when used in conjunction with an end-item. A major component includes any assembled element which forms a portion of an end-item without which the end-item is inoperable. A minor component includes any assembled element of a major component.

(c) *Accessories* and *attachments* are associated articles for any component, equipment, system, or end-item, and which are not necessary for its operation, but which enhance its usefulness or effectiveness.

(d) A *part* is any single unassembled element of a major or a minor component, accessory, or attachment which is not normally subject to disassembly without the destruction or the impairment of designed use.

(e) *Firmware* and any related unique support tools (such as computers, linkers, editors, test case generators, diagnostic checkers, library of functions, and system test diagnostics) directly related to equipment or systems covered under any category of the U.S. Munitions List are

considered as part of the end-item or component. Firmware includes but is not limited to circuits into which software has been programmed.

(f) *Software* includes but is not limited to the system functional design, logic flow, algorithms, application programs, operating systems, and support software for design, implementation, test, operation, diagnosis and repair. A person who intends to export software only should, unless it is specifically enumerated in §121.1 of this subchapter (*e.g.*, USML Category XIII(b)), apply for a technical data license pursuant to part 125 of this subchapter.

(g) A *system* is a combination of parts, components, accessories, attachments, firmware, software, equipment, or end-items that operate together to perform a function.

Note to paragraph (g): The industrial standards established by INCOSE and NASA provide examples for when commodities and software operate together to perform a function as a system. References to these standards are included in this note to provide examples for when commodities or software operate together to perform a function as a system. See the INCOSE standards for what constitutes a system at:

<http://g2sebok.incose.org/app/mss/asset.cfm?ID=INCOSE%20G2SEBOK%202.00&ST=F>, and in INCOSE SE Handbook v3.1 2007; ISO/IEC

15288:2008. See the NASA standards for examples of what constitutes a system in NASA SE Handbook SP-2007-6105 Rev 1.

(h) *Equipment* is a combination of parts, components, accessories, attachments, firmware, or software that operate together to perform a function of, as, or for an end-item or system. Equipment may be a subset of an end-item based on the characteristics of the equipment. Equipment that meets the definition of an end-item is an end-item. Equipment that does not

meet the definition of an end-item is a component, accessory, attachment, firmware, or software.

5. Section 121.11 is removed and reserved, as follows:

§121.11 [Reserved]

PART 123 – LICENSES FOR THE EXPORT AND TEMPORARY IMPORT OF DEFENSE ARTICLES

6. The authority citation for part 123 continues to read as follows:

Authority: Secs. 2, 38, and 71, Pub. L. 90–629, 90 Stat. 744 (22 U.S.C. 2752, 2778, 2797); 22 U.S.C. 2753; 22 U.S.C. 2651a; 22 U.S.C. 2776; Pub. L. 105–261, 112 Stat. 1920; Sec 1205(a), Pub. L. 107–228; Section 1261, Pub. L. 112-239; E.O. 13637, 78 FR 16129.

7. Section 123.20 is amended by revising paragraph (a) and paragraph (c) introductory text, to read as follows:

§123.20 Nuclear related controls.

(a) The provisions of this subchapter do not apply to articles, technical data, or services in Category VI, Category XVI, or Category XX of §121.1 of this subchapter to the extent that exports of such articles, technical data, or services are controlled by the Department of Energy or the Nuclear Regulatory Commission pursuant to the Atomic Energy Act of 1954, as amended, and the Nuclear Non-Proliferation Act of 1978, as amended, or are pursuant to a government transfer authorized pursuant to these Acts. For Department of Commerce controls, *see* 15 CFR 742.3 and 744.2, administered pursuant to Section 309(c) of the Nuclear Nonproliferation Act of 1978, as amended (42 U.S.C. 2139a(c)), and 15 CFR 744.5, none of which are subject to the provisions of this subchapter.

* * * * *

(c) A license for the export of a defense article, technical data, or the furnishing of a defense service relating to defense articles referred to in Category VI(e) or Category XX(b)(1) of §121.1 of this subchapter will not be granted unless the defense article, technical data, or defense service comes within the scope of an existing Agreement for Cooperation for Mutual Defense Purposes concluded pursuant to the Atomic Energy Act of 1954, as amended, with the government of the country to which the defense article, technical data, or defense service is to be exported. Licenses may be granted in the absence of such an agreement only:

* * * * *

PART 124 – AGREEMENTS, OFF-SHORE PROCUREMENT, AND OTHER DEFENSE SERVICES

8. The authority citation for part 124 continues to read as follows:

Authority: Sec. 2, 38, and 71, Pub. L. 90–629, 90 Stat. 744 (22 U.S.C. 2752, 2778, 2797); 22 U.S.C. 2651a; 22 U.S.C. 2776; Pub. L. 105–261; Section 1261, Pub. L. 112-239; E.O. 13637, 78 FR 16129.

9. Section 124.2 is amended by removing and reserving paragraphs (c)(5)(iii), (c)(5)(ix), and (c)(5)(xi), as follows

§124.2 Exemptions for training and military service.

* * * * *

(c) * * *

(5) * * *

(iii) [Reserved]

* * * * *

(ix) [Reserved]

* * * * *

(xi) [Reserved]

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**PART 125—LICENSES FOR THE EXPORT OF TECHNICAL DATA
AND CLASSIFIED DEFENSE ARTICLES**

10. The authority citation for part 125 continues to read as follows:

Authority: Secs. 2 and 38, Pub. L. 90–629, 90 Stat. 744 (22 U.S.C. 2752, 2778); 22 U.S.C. 2651a; E.O. 13637, 78 FR 16129.

11. Section 125.1 is amended by revising paragraph (e) to read as follows:

§125.1 Exports subject to this part.

* * * * *

(e) For the export of technical data related to articles in Category VI(e), Category XVI, and Category XX(b)(1) of §121.1 of this subchapter, please see §123.20 of this subchapter.

Rose E. Gottemoeller,
Acting Under Secretary,
Arms Control and International Security,
Department of State.

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